Surface Water Design Regulations Update

July 5, 2016

NPDES Stormwater Permit

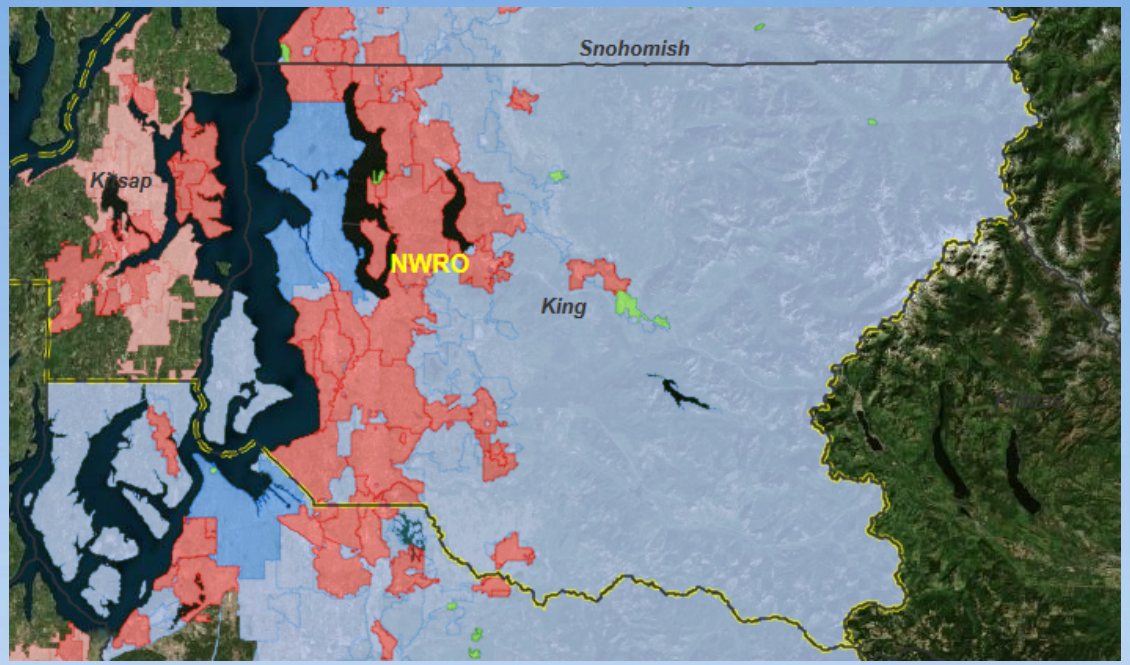
Adopt

Code Implementing Ecology Manual or Equivalent

By

December 31, 2016

Jurisdictions are in this Together



Phase I and Phase II Permit Coverage – King County

Map Credit: WA State Department of Ecology

Why Have Surface Water Design Regulations Changed?

Recent Research:

- Stormwater is a major source of pollution to Puget Sound
- Untreated stormwater is directly toxic to fish (WSU Puyallup Extension)
- Frequent small flows are damaging stream habitat (King County)
- New research is driving new regulations

Simple soil mixture reverses toxic stormwater effects

PUBLISHED ON JANUARY 21, 2015

PUYALLUP, Wash.—A simple column of common soil can reverse the toxic effects of urban runoff that otherwise quickly kills young coho salmon and their insect prey, according to new research by Washington State University, NOAA Fisheries and the U.S. Fish and Wildlife Service.

Low Impact development (LID)

Complements Other City SW Programs

Choices for implementation

2012 Ecology Manual plus Kirkland Addendum

2016 King County plus Kirkland Addendum and code updates

Ecology Minimum Requirements plus Technical Notebook that proves requirements are met

Preliminary Recommendation

Adopt 2016 King County Surface Water Design Manual with Addendum

- City currently follows 2009 KCSDM with Kirkland Addendum
- Preferred by development community
- Approved as equivalent to Ecology Manual (as a package)
- Flexibility in LID implementation
- Includes detailed guidance on non-permit items such as conveyance
- King County has conducted public outreach and provides excellent technical guidance and training
- Need to further evaluate flexibility versus certainty for permittees

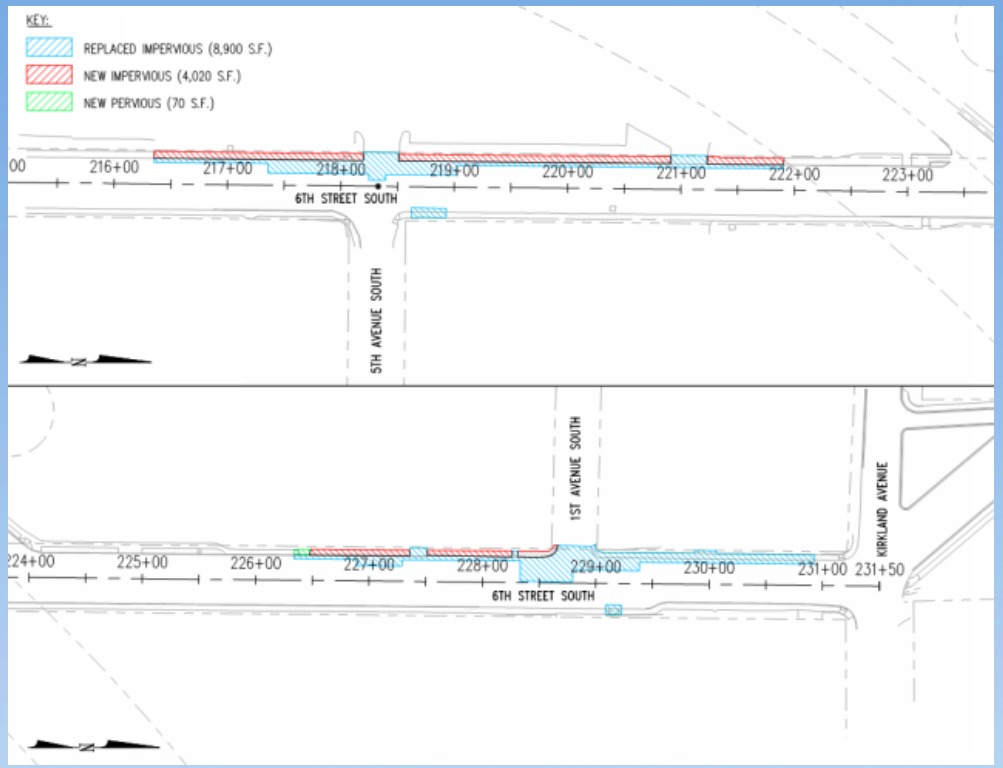
Major Changes
(with any implementation choice)

- All projects over threshold must use LID unless proved infeasible
- Updated study and design requirements for facilities proposed near landslide hazard areas (more so in 2016 KCSDM)
- More study, documentation and staff review for small/medium projects
- Updated maintenance standards that include new facility types

Impact depends on size of project

- Private Development projects – largest impact to medium sized projects (projects ranging from 2,000 – 10,000 sf impervious area)
- City capital projects – no more transportation exemption, all projects creating more than 2,000 sf will need to evaluate LID

CIP Example – 6th St Sidewalk



Proposal to create ~4,020 sf of new impervious and replace ~8,900 sf of impervious area

6th St Sidewalk CIP – Potential Construction Cost Impacts

Type of Material	Estimated Construction Cost Range *	Estimated % Construction Cost Increase Relative to Conventional *
Conventional Concrete (CC)	$230,000 - $345,000	--
Pervious Concrete	$310,000 - $465,000	35%
CC + Roadside Rain Garden	$368,000 - $552,000	60%
CC + Infiltration / Dispersion Trench	$385,000 - $578,000	68%

* Estimates are very rough – refinement underway

Possible Maintenance Impacts

- More flow control and treatment facilities
- More decentralized small LID facilities – shift in facility types and possibly ownership
- New facility types require different tools and techniques
- Still investigating cost impacts

Interaction with LID Code Review and Critical Areas Update (Ch 90 KZC)

- **NPDES Permit Requirement: LID code review** to make LID "the preferred and commonly used approach to site development"

- **Critical Areas** update contains stormwater language – review for conflicts and opportunities

Outreach Process

- Parks/Public Works/Human Resources Council Committee
- CIP Steering Committee
- Open House for the Community
- Open House for Developers and Design Engineers

Photo Credit: The Cottage Company

Timeline and Next steps

- Second briefing to full Council or Committee(s) if desired
- Return to Council in fall with KMC changes to adopt manual, Addendum and/or other code changes
- May make requests as part of 2017-2018 budget process: development review, CIP, maintenance
- December adoption with effective date: January 1, 2017
- Staff will use the fall to develop pre-approved plans and policies to:
  - 1) Support design manual implementation
  - 2) Seek or provide training
  - 3) Encourage flexibility and innovation for improved outcomes

Questions and discussion